```c
// 1.Write a C program to find the sum of all the elements
// of an array

#include<stdio.h>
void main()
{
    int a[100],total,n;
    int sum=0;
    printf("Enter how many element you want to add \n");
    scanf("%d",&n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }

    for (int j = 0; j < n; j++)
    {
      sum+=a[j];
    }
    printf("The sum of Element is %d",sum);

}
// 2.An array consist of Integers. Write a C program to
// count the number of elements less than, greater than
// and equal to zero.


#include <stdio.h>
void main()
{
    int a[100], total, n;
    int pcount = 0;
    int ncount = 0;
    int zcount = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }

    for (int j = 0; j < n; j++)
    {
        if (a[j] > 0)
        {
           pcount+=1;
        }
```

```
        else if (a[j] < 0)
        {
            ncount+=1;
        }
        else
        {
            zcount+=1;
        }


    }
    printf("The Total positive numbers are %d \n",pcount);
    printf("The Total negative numbers are %d \n",ncount);
    printf("The Total zero numbers are %d \n",zcount);
}
// 3.Write a C program that return the positions of the
// pallindrome element in array

#include <stdio.h>
void main()
{
    int a[100], total, n,temp,remainder,rev,original;
        printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    printf("The position of Palindrome numbers are as follows \n");

    for (int j = 0; j < n; j++)
    {
        temp=a[j];
        original=a[j];
        rev=0;
        while (temp > 0)
        {
            remainder=temp%10;
            rev=(rev*10)+remainder;
            temp=temp/10;
        }
        if (original == rev)
        {
            printf("%d \t",j);
            // printf("The number %d is palindrome",original);
```

```
        }
    }
}
// 4.Write a C program to sort first half of array in
// ascending order and second half of array in
// descending order

#include <stdio.h>
void main()
{
    int a[100], total, n,temp,even_sort,odd_sort,first_half,second_half;
        printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }

    first_half=n/2;
    // printf("%d",first_half);
    second_half=n-first_half;

    for (int i = 0; i < first_half-1 ; i++)
    {
        for (int j=i+1; j < first_half ; j++)
        {
            if (a[i] > a[j]) //condition for swapping
            {
                temp = a[j];
                a[j] = a[i];
                a[i] = temp; //swapping
            }
        }
    }
    for (int d = first_half; d < n-1; d++)
    {
        for (int j=d+1; j <n ; j++)
        {
            if (a[d] < a[j]) //condition for swapping
            {
                temp = a[j];
```

```
                a[j] = a[d];
                a[d] = temp; //swapping
            }
        }
    }
    printf("\nafter sorting array is \n");
    for (int k = 0; k < n ; k++)
    {
        printf("%d \t", a[k]);
    }

}
// 5.Write a C program to copy the elements of one array
// into another arra

#include <stdio.h>
void main()
{
    int a[100], total, n,b[100],n1=100;
        printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    for (int  j = 0; j < n; j++)
    {
       b[j]=a[j];
    }
    for (int  k = 0; k < n; k++)
    {
        printf("%d \t",b[k]);
    }




}
// 6.Write a C program to sort only even numbers in given
// array

#include <stdio.h>
void main()
{
    int a[10] = {95,42,26,11,96,55,37,18,52,71};
    int n = 10;
    int temp;
```

```c
    printf("before sorting array is \n");
    for (int k = 0; k < n; k++)
    {
        printf("%d \t", a[k]);
    }

    //logic for sorting
    for (int i = 0; i < n - 1; i++)
    {
        if (a[i] % 2 == 0)
        {
            for (int j = i + 1; j < n; j++)
            {
                if (a[j] % 2 == 0)
                {
                    if (a[i] > a[j]) //condition for swapping
                    {
                        temp = a[j];
                        a[j] = a[i];
                        a[i] = temp; //swapping
                    }
                }
            }
        }
    }
    printf("\nafter sorting array is \n");
    for (int k = 0; k < n; k++)
    {
        printf("%d \t", a[k]);
    }
}
// 7.Write a program in C to separate odd and even
// integers in same array

#include <stdio.h>
void main()
{
    int a[100], total, n,temp;
    int sum = 0;
    int b[100];
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    int odd = 0;
```

```c
    for (int j = 0; j < n; j++)
    {
        if (a[j] % 2 != 0)
        {
            b[odd] = a[j];
            odd+=1;
        }

    }
    for (int  i = 0; i < n; i++)
    {
        if (a[i] %2 == 0)
        {
            b[odd] = a[i];
            odd+=1;
        }

    }


    printf("After seprating array is \n");
    for (int i = 0; i < n; i++)
    {
        printf("%d \t",b[i]);
    }

}
// 8.Write a program in C to count the frequency of each
// element of an array.

#include <stdio.h>
void main()
{
    int a[100], count, n;
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    int frequency[100];
    printf("Enter elements \n");
    for (int j = 0; j < n; j++)
    {
        scanf("%d", &a[j]);
    }

    for (int i = 0; i < n; i++)
    {
        count = 0;
```

```
        for (int j = 0; j < n; j++)
        {
            if (a[i] == a[j])
            {
                count += 1;
            }
        }
        frequency[i] = count;
    }
    printf("The  Element is \n");
    for (int k = 0; k < n; k++)
    {
        printf("%d \t",a[k]);
    }
     printf("Frequency of elements are \n");
    for (int k = 0; k < n; k++)
    {
        printf("%d \t",frequency[k]);
    }

}
// 9.Write a program in C to print all unique elements in
// an array.

#include <stdio.h>
void main()
{
    int a[100], count, n;
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    int frequency[100];
    printf("Enter elements \n");
    for (int j = 0; j < n; j++)
    {
        scanf("%d", &a[j]);
    }

    for (int i = 0; i < n; i++)
    {
        count = 0;
        for (int j = 0; j < n; j++)
        {
            if (a[i] == a[j])
            {
                count += 1;
            }
        }
```

```
        frequency[i] = count;
    }

     printf("Unique  elements are \n");
    for (int k = 0; k < n; k++)
    {
       if (frequency[k] == 1 )
       {
          printf("%d \t",a[k]);
       }

    }

}
// 10. Write a program in C to insert New value in the array
// (sorted list )

#include<stdio.h>
void main()
{
    int a[100],total,n,l,k,add_element,user_data,temp;
    int sum=0;
    printf("Enter how many element you want to add \n");
    scanf("%d",&n);
    printf("Enter elements of sorted array \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Enter data which you wanna to add ");
    scanf("%d",&user_data);


    // for getting index of elemnt before and after which want to add data
    for (int i = 0; i < n; i++)
    {  temp=i;
        if (a[i]>user_data)
        {
            break;
        }

    }
    l=temp-1;// Element after which you want to add data

   //For shifting position of an elements

    for ( k=n-1; k >=temp; k--)
    {
        a[k+1]=a[k];
```

```
    }

   //adding new element
    a[l+1]=user_data;
    printf("After add array is \n");

    //after adding array
    for (int j = 0; j < n+1; j++)
    {
      printf("%d \t",a[j]);
    }


}
// 11. Write a program in C to delete an element at desired
// position from an array.


#include<stdio.h>
void main()
{
     int a[10] = {11, 15, 45, 78, 63},delete,count;
     int n=5;

     printf("enter element you want to delete \n");
     scanf("%d",&delete);
     printf("before deleting array is \n");
     for (int m = 0; m < n; m++)
     {
        printf("%d \t",a[m]);
     }
     for (int i = 0; i < n; i++)
     {  count=i;
        if (a[i] == delete)
        {
            break;
        }

     }
     for (int j = count; j < n; j++)
     {
        a[j]=a[j+1];
     }
     printf(" \nAfter deleting array is \n");
     for (int m = 0; m < n-1; m++)
     {
        printf("%d \t",a[m]);
     }
```

```c
}
// 12. Write a program in C to find the maximum /

#include <stdio.h>
void main()
{
    int a[10] = {11, 15, 45, 78, 63};
    int max, i;
    int flag = 0;
    max = a[0];
    for (i = 0; i < 5; i++)
    {
        if (max < a[i])
        {
            max = a[i];
        }
    }
    printf("maximum element is %d ", max);
}
// 12. Write a program in C to find the minimum element in an array


#include <stdio.h>
void main()
{
    int a[10] = {11, 15, 45, 78, 63};
    int min, i;

    min = a[0];

    for (i = 0; i < 5; i++)
    {
        if (min > a[i])
        {
            min = a[i];
        }
    }
    printf("minium element is %d ", min);
}
// 13. Write a program in C to find the second largest
// element in an array.


#include<stdio.h>
void main()
{
```

```c
    int a[10]={4,42,83,53,24,72,81,16,91,68};
    int max1,max2;
    if (a[0]>a[1])
    {
        max1=a[0];
        max2=a[1];
    }
    else
    {
         max1=a[1];
        max2=a[0];
    }

    for (int i = 2; i < 10; i++)
    {
        if (a[i] > max1)
        {
            max2=max1;
            max1=a[i];
        }
        else if (a[i]<max2)
        {
            max1=max1;
            max2=max2;
        }
        else if (a[i]>max2 && a[i]<max1)
        {
            max2=a[i];
            max1=max1;
        }


    }
    printf("first max number is %d \n",max1);
    printf("second max number is %d \n",max2);

}
// 14. Write a C Program to Find the Number of Elements
// in an Array

#include<stdio.h>
void main()
{
    int a[100],total,n;
    int sum=0;
    printf("Enter how many element you want to add \n");
    scanf("%d",&n);
    printf("Enter elements \n");
```

```c
    for (int i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }

    printf("The total element in array are \n");
    printf("%d",sizeof(a)/sizeof(int));

}
// 15. Write a C Program to Check Array bounds while
// Inputing Elements into the Array

#include <stdio.h>
void main()
{
    int a[100], n;
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    if (n > (sizeof(a) / sizeof(int)))
    {
        printf("Array index out of bound");
    }
    else
    {
        printf("Enter elements \n");
        for (int i = 0; i < n; i++)
        {
            scanf("%d", &a[i]);
        }
        printf("Element are as follows \n");
         for (int j = 0; j < n;  j++)
        {
            printf("%d \t", a[j]);
        }


    }

}
// 16. Write a C Program to Print the Alternate Elements
// in an Arra

#include<stdio.h>
void main()
{
    int a[100],total,n;
    int sum=0;
```

```c
    printf("Enter how many element you want to add \n");
    scanf("%d",&n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d",&a[i]);
    }

    for (int j = 0; j < n; j=j+2)
    {
     printf("%d \t",a[j]);
    }
    printf("\n");
    for (int j = 1; j < n; j=j+2)
    {
     printf("%d \t",a[j]);
    }


}
// 17. Write a C Program to Find 2 Elements in the Array
// such that Difference between them is Largest

#include <stdio.h>
void main()
{
    int a[100], total, n,min,max;
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    min = a[0];

    for (int i = 0; i < n; i++)
    {
        if (min > a[i])
        {
            min = a[i];
        }
    }
    max = a[0];
    for (int i = 0; i < n; i++)
    {
        if (max < a[i])
```

```
        {
            max = a[i];
        }
    }
    printf("The element which are having largesr diffrence are %d and %d",min,
max);



}
// 19. Write a C program to store squares of the elements
// in the same array

#include <stdio.h>
void main()
{
    int a[100], total, n;
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
        scanf("%d", &a[i]);
    }
    printf("Original array is \n");
    for (int i = 0; i < n; i++)
    {
        printf("%d \t", a[i]);
    }

    for (int j = 0; j < n; j++)
    {
        a[j] = a[j] * a[j];
    }
    printf("\n after square array is \n");
    for (int i = 0; i < n; i++)
    {
        printf("%d \t", a[i]);
    }
}
// 21. Write C Program to Find if a given Integer X appears
// more than N/2 times in a Sorted Array of N Integers

#include <stdio.h>
void main()
{
    int a[100], count, n;
```

```c
    int sum = 0;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    int frequency[100];
    printf("Enter elements \n");
    for (int j = 0; j < n; j++)
    {
        scanf("%d", &a[j]);
    }

    for (int i = 0; i < n; i++)
    {
        count = 0;
        for (int j = 0; j < n; j++)
        {
            if (a[i] == a[j])
            {
                count += 1;
            }
        }
        frequency[i] = count;
    }

     printf("element which appers more than n/2 times is \n");
    for (int k = 0; k < n; k++)
    {
       if (frequency[k] > (n/2) )
       {
          printf("%d \t",a[k]);
          break;
       }

    }

}

// 24. Write a C program to find the maximum sum of a
// subsequent numbers in given array

#include <stdio.h>
void main()
{
    int a[100], total, n,sum;
    printf("Enter how many element you want to add \n");
    scanf("%d", &n);
    printf("Enter elements \n");
    for (int i = 0; i < n; i++)
    {
```

```
        scanf("%d", &a[i]);
    }

    sum=a[0]+a[1];
    for (int i = 1; i < n; i++)
    {
       if ((a[i+1]+a[i]) > sum)
       {
           sum=a[i+1]+a[i];
       }

    }
    printf("The maximum sum of two consegative elements is %d \n",sum);



}
```